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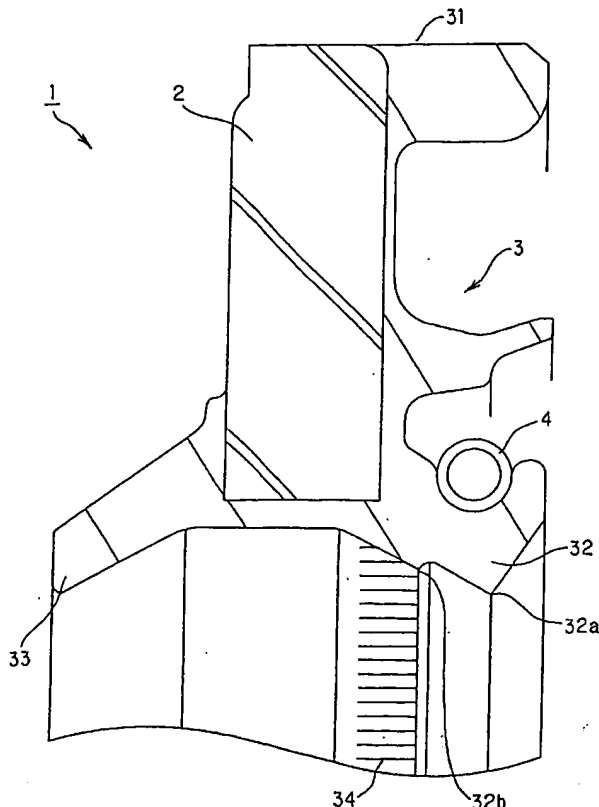
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- (71) 出願人 (米国を除く全ての指定国について): NOK  
株式会社 (NOK CORPORATION) [JP/JP]; 〒105-8585  
東京都港区芝大門1丁目12番15号 Tokyo (JP).
- (72) 発明者; および
- (75) 発明者/出願人 (米国についてのみ): 新井 秀徳

(ARAI, Hideaki) [JP/JP]; 〒960-1193 福島県 福島市  
永井川字続堀 8 番地 NOK 株式会社内 Fukushima  
(JP). 武野 一記 (TAKENO, Kazuki) [JP/JP]; 〒960-1193  
福島県 福島市 永井川字続堀 8 番地 NOK 株式会  
社内 Fukushima (JP). 山根 一郎 (YAMANE, Ichiro)  
[JP/JP]; 〒960-1193 福島県 福島市 永井川字続堀  
8 番地 NOK 株式会社内 Fukushima (JP). 宗形 忍  
(MUNAKATA, Shinobu) [JP/JP]; 〒960-1193 福島県  
福島市 永井川字続堀 8 番地 NOK 株式会社内  
Fukushima (JP). 山科 勝美 (YAMASHINA, Katsumi)  
[JP/JP]; 〒960-1193 福島県 福島市 永井川字続堀  
8 番地 NOK 株式会社内 Fukushima (JP). 渡辺 勝  
(WATANABE, Masaru) [JP/JP]; 〒960-1193 福島県  
福島市 永井川字続堀 8 番地 NOK 株式会社内  
Fukushima (JP).

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(54) Title: RECIPROCATING SEAL

(54) 発明の名称: 往復動シール



(57) Abstract: A reciprocating seal used, for example, for a shock absorber. A main seal lip (32) is formed in a two-stage lip structure with a first lip (32a) and a second lip (32b), and axially extending plural projections (34) are arranged on a slide contact face of the second lip (32b). This construction improves friction force characteristics and enhances sealing capability.

(57) 要約: 本発明は、例えばショックアブソーバに用いられる往復動シールに関するもので、メインシールリップ 32 を、第 1 リップ 32a と第 2 リップ 32b からなる 2 段リップ構造とし、第 2 リップ 32b の摺接面に、軸方向に伸びる複数の突起 34 を設けることで、摩擦力特性の向上を図りつつ、密封性能の向上を図る。

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# INTERNATIONAL SEARCH REPORT

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PCT/JP03/11995

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> F16J15/32

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> F16J15/32

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2003  
Kokai Jitsuyo Shinan Koho 1971-2003 Toroku Jitsuyo Shinan Koho 1994-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2001-355740 A (NOK Kabushiki Kaisha), 26 December, 2001 (26.12.01), Full text; Figs. 2, 3 (Family: none)	1
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 61197/1987 (Laid-open No. 168365/1988) (NOK Kabushiki Kaisha), 02 November, 1988 (02.11.88), Page 1, line 6 to page 2, line 4; page 5, line 9 to page 6, line 12; Fig. 3 (Family: none)	1

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2-35272 A (Sakagami Seisakusho Ltd.), 05 February, 1990 (05.02.90), Claims; page 3, upper right column, line 15 to lower left column, line 9; page 5, upper left column, lines 7 to 13; Figs. 3, 7 (Family: none)	1
A	CD-ROM of the specification and drawings annexed to the request of Japanese Utility Model application no. 31061/1993 (laid-open no. 84067/1994) (Arai Pump Mfg. Co., Ltd.), 02 December, 1994 (02.12.94), Full text; Fig. 1 (Family: none)	1